What is claimed is:

1. A cathode ray tube, comprising at least a panel having a phosphor screen formed thereon, a shadow mask having a plurality of electron beam-passing portions, and a frame across which the shadow mask is stretched in a state where a tensile force is applied thereto, the frame being securely attached to the panel by an elastic support member while the phosphor screen is opposed to the shadow mask;

wherein the elastic support member is located substantially in the middle portion of a frame portion and the shadow mask is configured such that the tension in the middle portion of the shadow mask is larger than the tension at the edge portions of the shadow mask.

2. The cathode ray tube according to claim 1, wherein the elastic support member comprises a fixed portion to be fixed to the frame, a matching portion to be matched to a stud pin provided on the inside of the panel side wall, and a connecting portion for connecting the matching portion and the fixed portion.

3. The cathode ray tube according to claim 2, wherein the connecting portion has an approximately V-shaped configuration.

4. The cathode ray tube according to claim 2, wherein the fixed portion of the elastic support member has an area of at least 5 cm^2.

5. The cathode ray tube according to claim 2, wherein the ratio of the area of the fixed portion of the elastic support member to the area of the frame portion to which the elastic support member is fixed is at least greater than 1/25.

6. The cathode ray tube according to claim 1, wherein the elastic support member includes a vibration suppressing structure.

7. The cathode ray tube according to claim 2, wherein the spring constant of the elastic support member is adjusted by forming an opening in the connecting portion of the elastic support member and adjusting the size of the opening.

8. The cathode ray tube according to claim 1, wherein the force applied to the frame portion is adjusted to be in the range of 1 kgf to 8 kgf when the frame is disposed in the panel with the elastic support member.

9. The cathode ray tube according to claim 2, wherein the spring constant of the elastic support member is adjusted to be in the range of 0.1 kgf/mm to 2.5 kgf/mm.

10. The cathode ray tube according to claim 1, wherein the tension distribution of the shadow mask satisfies the relationships $T1 \geq T2 \geq T3$ and $T1 \geq 1.1 \times T3$, where the tension of the shadow mask middle portion is T1, the tension of the shadow mask edge portions is T3 and the tension of the intermediate portion between the middle and the edge portions is T2.

11. The cathode ray tube according to claim 1, wherein the shadow mask is provided with a damper for attenuating the vibration.

12. The cathode ray tube according to claim 11, wherein the damper is freely movable relative to the shadow mask.

13. The cathode ray tube according to claim 12, wherein the damper is inserted into an opening formed in the shadow mask.

14. The cathode ray tube according to claim 13, wherein the damper is a wire-like member.

15. The cathode ray tube according to claim 13, wherein the damper is a ring-like member.

16. The cathode ray tube according to claim 1, wherein the shadow mask is made of Fe-Ni alloy.

17. A cathode ray tube comprising at least a panel having a phosphor screen formed thereon, a shadow mask having a plurality of electron beam-passing portions, and a frame across which the shadow mask is stretched in a state where a tensile force is applied thereto, the frame being securely attached to the panel by an elastic support member while the phosphor screen is opposed to the shadow mask;

wherein the elastic support member is fixed to an elastic support member-holding plate located substantially in the middle of a

frame portion and the shadow mask is configured such that the tension in the middle portion of the shadow mask is larger than the tension at the edge portions of the shadow mask.

18. The cathode ray tube according to claim 17, wherein the elastic support member comprises a fixed portion to be fixed to the frame, a matching portion to be matched to a stud pin provided on the inside of the panel side wall, and a connecting portion for connecting the matching portion and the fixed portion.

19. The cathode ray tube according to claim 18, wherein the connecting portion has an approximately V-shaped configuration.

20. The cathode ray tube according to claim 18, wherein the fixed portion of the elastic support member has an area of at least 5 cm^2.

21. The cathode ray tube according to claim 18, wherein the ratio of the area of the fixed portion of the elastic support member to the area of the frame portion to which the elastic support member is fixed is at least greater than 1/25.

22. The cathode ray tube according to claim 17, wherein the elastic support member includes a vibration suppressing structure.

23. The cathode ray tube according to claim 18, wherein the spring constant of the elastic support member is adjusted by forming an opening in

the connecting portion of the elastic support member and adjusting the size of the opening.

24. The cathode ray tube according to claim 17, wherein the force applied to the frame portion is adjusted to be in the range of 1 kgf to 8 kgf when the frame is disposed in the panel with the elastic support member.

25. The cathode ray tube according to claim 18, wherein the spring constant of the elastic support member is adjusted to be in the range of 0.1 kgf/mm to 2.5 kgf/mm.

26. The cathode ray tube according to claim 17, wherein the tension distribution of the shadow mask satisfies the relationships $T1 \geq T2 \geq T3$ and $T1 \geq 1.1 \times T3$ where the tension of the shadow mask middle portion as T1, the tension of the shadow mask edge portions as T3, and the tension of the intermediate portion between the middle and the edge portions as T2.

27. The cathode ray tube according to claim 17, wherein the shadow mask is provided with a damper for attenuating the vibration.

28. The cathode ray tube according to claim 27, wherein the damper is freely movable relative to the shadow mask.

29. The cathode ray tube according to claim 28, wherein the damper is inserted into an opening formed in the shadow mask.

30. The cathode ray tube according to claim 29, wherein the damper is a wire-like member.

31. The cathode ray tube according to claim 29, wherein the damper is a ring-like member.

32. The cathode ray tube according to claim 17, wherein the shadow mask is made of Fe-Ni alloy.

33. A cathode ray tube comprising at least a panel having a phosphor screen formed thereon, a mask having a plurality of electron beam-passing portions, and a frame on which the mask is held, the frame being securely attached to the panel by a plurality of elastic support members while the phosphor screen is opposed to the mask;

wherein the plurality of elastic support members are such that at least two elastic support members having substantially different spring constants are combined.

34. The cathode ray tube according to claim 33, wherein each of the elastic support members is located substantially in the middle of a frame portion.

35. The cathode ray tube according to claim 33, wherein each of the elastic support members comprises a fixed portion to be fixed to the frame, a matching portion to be matched to a stud pin provided on the inside of the panel side wall, and a connecting portion for connecting the matching

portion and the fixed portion.

36. The cathode ray tube according to claim 35, wherein the connecting portion has an approximately V-shaped configuration.

37. The cathode ray tube according to claim 33, wherein of the elastic support members, opposing elastic support members have the same spring constant.

38. The cathode ray tube according to claim 35, wherein the spring constant is adjusted by forming an opening in the connecting portion of each of the elastic support members and adjusting the size of the opening.

39. The cathode ray tube according to claim 33, wherein the force applied to the frame portion is adjusted to be in the range of 1 kgf to 8 kgf when the frame is disposed in the panel with the elastic support member.

40. The cathode ray tube according to claim 33, wherein the spring constant of each of the elastic support members is adjusted to be in the range of 0.1 kgf/mm to 2.5 kgf/mm.

41. The cathode ray tube according to claim 35, wherein the fixed portion of each of the elastic support member has an area of at least 5 cm^2.

42. The cathode ray tube according to claim 35, wherein the ratio of the area of the fixed portion of each of the elastic support members to the area

of the frame portion to which the elastic support member is fixed is at least greater than 1/25.

43. The cathode ray tube according to claim 33, wherein the mask is stretched across the frame in a state where a tensile force is applied thereto.

44. The cathode ray tube according to claim 43, wherein the tension distribution of the mask is such that the tension in the middle portion is larger than the tension at the edge portions.

45. The cathode ray tube according to claim 43, wherein the tension distribution of the mask satisfies the relationships $T1 \geq T2 \geq T3$ and $T1 \geq 1.1 \times T3$, where the tension of the mask middle portion is T1, the tension of the mask edge portions is T3, and the tension of the intermediate portions between the middle and the edge portions is T2.

46. The cathode ray tube according to claim 44, wherein the tension distribution of the mask satisfies the relationships $T1 \geq T2 \geq T3$ and $T1 \geq 1.1 \times T3$, where the tension of the mask middle portion is T1, the tension of the mask edge portions is T3, and the tension of the intermediate portions between the middle and the edge portions is T2 in the tension distribution.

47. The cathode ray tube according to claim 39, wherein the mask is provided with a damper for attenuating the vibration.

48. The cathode ray tube according to claim 47, wherein the damper is

freely movable relative to the shadow mask.

49. The cathode ray tube according to claim 48, wherein the damper is inserted into an opening formed in the shadow mask.

50. The cathode ray tube according to claim 49, wherein the damper is a wire-like member.

51. The cathode ray tube according to claim 49, wherein the damper is a ring-like member.

52. The cathode ray tube according to claim 33, wherein the mask is made of Fe-Ni alloy.

53. An image display apparatus comprising a cathode ray tube according to claim 1, an electron beam controlling circuit, and a cabinet.

54. An image display apparatus comprising a cathode ray tube according to claim 7, an electron beam controlling circuit, and a cabinet.

55. An image display apparatus comprising a cathode ray tube according to claim 33, an electron beam controlling circuit, and a cabinet.

56. An image display apparatus according to claim 53, further comprising a loudspeaker.

57. An image display apparatus according to claim 54, further

comprising a loudspeaker.

58. An image display apparatus according to claim 55, further comprising a loudspeaker.